

REMARKS

By the present amendment, independent claims 1 and 2 have been amended to further clarify the concepts of the present invention. Support for these amendments may be found, among other places, on page 3, line 36 and Figure 1 of the drawings. Entry of the above amendments is respectfully requested.

It is submitted that the products according to the claimed invention differ from those of the previously cited Mori et al patent in terms of structure and thus one or more properties and these differences produce unexpected or surprising results. More particularly, the morphology of Si particles dispersed by the HVOF method is such as shown in Fig. 1 of the present application and is significantly different from that shown in Fig. 1A of the Mori et al patent. From a comparison of the two microphotographs, it is evident the morphology is different, particularly with reference to the following features:

(1) The Si particles are rounded modular, specifically, the ratio of short diameter is 1/3 or more in the present invention, while several of the Si particles are needle-shaped, i.e., the ratio of short diameter/long diameter is less than 1/3 in the Mori et al patent.

(2) The inclusion of relatively coarse Si particles of more than 10 μm as shown in Fig. 1 of the present application contributes to enhance both wear resistance and seizure resistance with the materials according to the present invention. In distinct contrast, the

Si particles are fine (less than 10 μm) in the Mori et al patent and thus only contribute to enhance the wear resistance.

In view of the above, it is submitted that the alloys according to the claimed invention differ from those of the cited Mori et al patent in terms of one or more of proportions, structure and/or properties and these differences produce unexpected or surprising results.

In view of the foregoing, it is submitted that the subject application is now in condition for allowance and early notice to that effect is earnestly solicited.

In the event this paper is not timely filed, the undersigned hereby petitions for an appropriate extension of time. The fee for this extension may be charged to Deposit Account No. 01-2340, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Marked Up Version of Amendments to Specification and Claims

IN THE CLAIMS:

1. (Twice Amended) A flame-sprayed aluminum-alloy, containing from 12 to 60% by weight of Si, the balance being essentially Al, the aluminum-alloy flame-sprayed by means of high velocity oxy-fuel flame-spraying method (HVOF) onto a substrate roughened by shot blasting, and includes granular Si particles dispersed in the matrix of the aluminum alloy, the granular Si particles having a short-diameter/long diameter ratio of 1/3 or more and some of the granular Si particles having a particle size greater than 10 μ m, and further said flame-sprayed aluminum alloy has adhesive strength of film higher than that of a flame-sprayed Ni film, as measured by a shear-fracture testing method.

2. (Twice Amended) A flame-sprayed aluminum-alloy containing from 12 to 60% by weight of Si, from 0.1 to 30% by weight of Sn, the balance being essentially Al, the aluminum-alloy flame-sprayed by means of high velocity oxy-fuel flame-spraying method (HVOF) on a substrate roughened by shot blasting, and includes granular Si particles and Sn dispersed in the matrix of the aluminum alloy, the granular Si particles having a short-diameter/long diameter ratio of 1/3 or more and some of the granular Si particles having a particle size greater than 10 μ m, and further said flame-sprayed aluminum alloy has adhesive strength of film higher than that of a flame-sprayed Ni film, as measured by a shear-fracture testing method.